SCIENTIFIC NOTE
Effect of *Eucalyptus dives* Extracts on *Pheidole megacephala* (Fabricius) (Hymenoptera: Formicidae)[1]

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ABSTRACT. *Eucalyptus dives* extracts repelled starved *Pheidole megacephala* (Fabricius) from sucrose solutions in choice tests.

Three dilutions (1:1, 1:10, 1:100) of *Eucalyptus dives* steam extracts were tested for repellency against big-headed ants, *Pheidole megacephala* (Fabricius) in choice tests. Nine *P. megacephala* colonies, each consisting of approximately 1,000 workers, were starved for 24 hours prior to the experiment. Each colony was in a separate cage. Two wooden tongue depressors were placed in each cage. A drop of 75% sucrose was placed on each tongue depressor. A drop of distilled water was added to the drop of sucrose on one tongue depressor of each cage. In each cage, a drop of eucalyptus extract was added to the remaining sucrose drop (three replicates per dilution). The number of ants feeding at each drop of sucrose was noted at 10 minute intervals for 150 minutes.

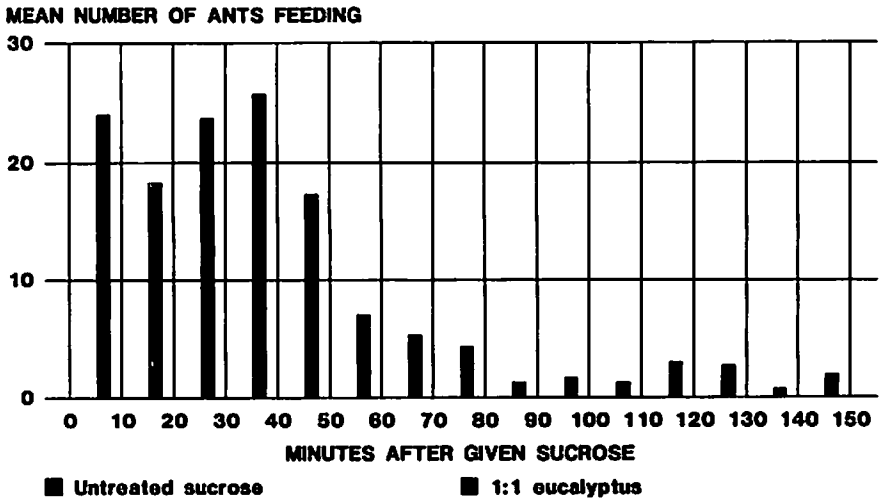

FIGURE 1. Data collected every ten minutes on the number of *Pheidole megacephala* worker ants feeding at untreated sucrose solution and sucrose treated with 1:1 *Eucalyptus dives* steam extract. No ants were observed feeding at the treated sucrose over a 2 and a half hour period.

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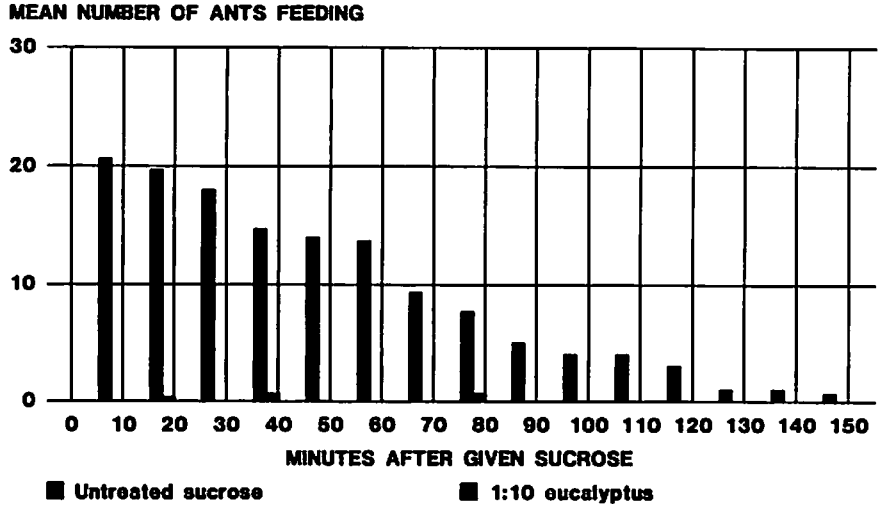

FIGURE 2. Data collected every ten minutes on the number of *Pheidole megacephala* worker ants feeding at untreated sucrose solution and sucrose treated with 1:10 *Eucalyptus dives* steam extract. No ants were observed feeding at the treated sucrose for the first 30 minutes.

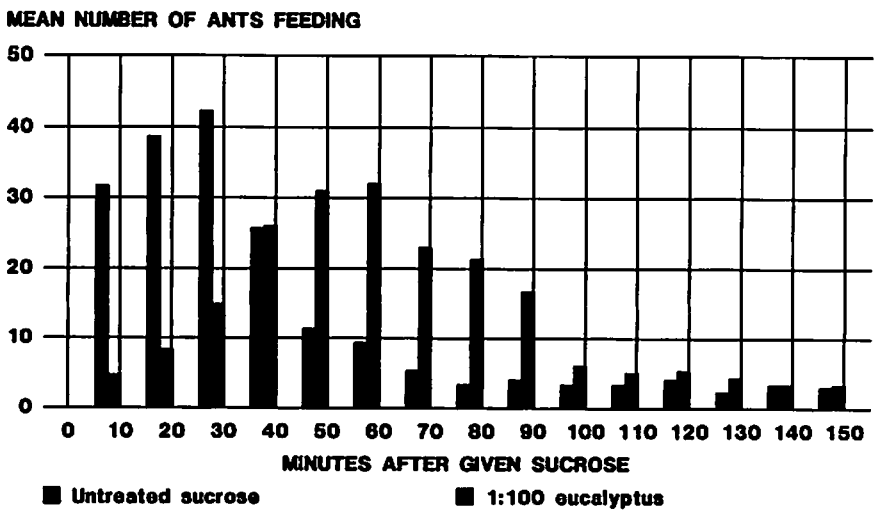

FIGURE 3. Data collected every ten minutes on the number of *Pheidole megacephala* worker ants feeding at untreated sucrose solution and sucrose treated with 1:100 *Eucalyptus dives* steam extract. After 40 minutes, the ants were not repelled by the 1:100 dilution of eucalyptus extract.

The 1:1 dilution of *E. dives* extract completely repelled ants for the duration of the experiment (Fig. 1). The 1:10 dilution was slightly less repellent than the 1:1 dilution (Fig. 2). The 1:100 dilution of *E. dives* extract did not repel 100% of the ants at any time. However, for the first 30 minutes of the experiment, ants more readily fed on the untreated sucrose, than on the sucrose treated with 1:100 *E. dives* extract (Fig. 3).

Ants are clearly repelled by *E. dives* extracts. To have practical applications, eucalyptus extracts must be formulated to reduce their volatility.

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